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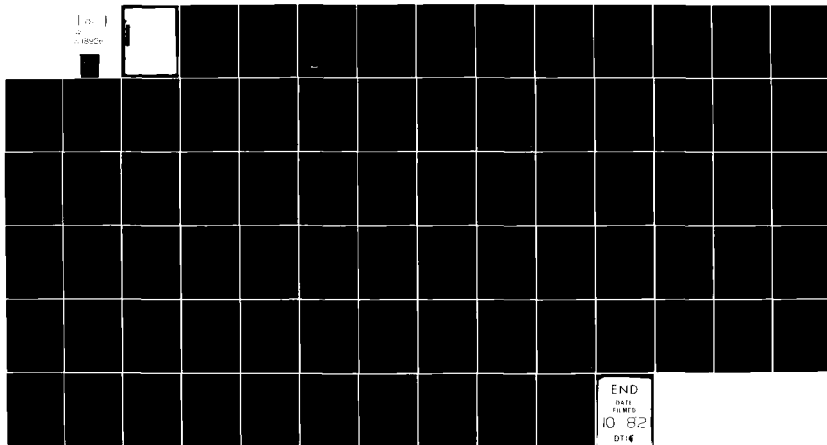
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A SURVEY OF NATO DEFENSE CONCEPTS.(U)
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As part of a larger study, a survey was conducted of articles and papers that have proposed new or different concepts for the defense of NATO. Each article was read for the author's view on three topics: Why a change is needed in NATO's current defense concepts or capabilities; what the main tenets of the author's proposed concepts are; and how the concept is supposed to work. This Note presents a synopsis of the unclassified articles, selected to reflect many different views. It also categorizes the views in several ways. No attempt is made, however, to evaluate the individual proposals or to incorporate any information on possible Soviet/Warsaw Pact reactions to the proposals. The main purpose of the Note is to provide planners and analysts with an overview of the variety and scope of suggested changes in NATO defense concepts and capabilities. 71 pp.

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A RAND NOTE

A SURVEY OF NATO DEFENSE CONCEPTS

R. Levine, T. T. Connors,
M. G. Weiner, R. A. Wise

June 1982

N-1871-AF

Prepared for

The United States Air Force

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PREFACE

As background to a Project AIR FORCE study on "New Options for NATO Defense," a survey was conducted of articles and papers that have proposed new or different concepts for the defense of NATO. Each article was read for the author's views on three topics:

- o Why a change is needed in NATO's current defense concepts or capabilities.
- o What the main tenets of the author's proposed concept are.
- o How the concept is supposed to work.

This Note presents a synopsis of the unclassified articles, selected to reflect many different views. It also categorizes the views in several ways. No attempt is made, however, to evaluate the individual proposals or to incorporate any information on possible Soviet/Warsaw Pact reactions to the proposals. The main purpose of the Note is to provide planners and analysts with an overview of the variety and scope of suggested changes in NATO defense concepts and capabilities.

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I. INTRODUCTION

Any attempt to canvas the open literature on proposed new or modified defense concepts will probably find that as great as is the number of articles, books, speeches, symposiums, and seminars, the variety of rationales is hardly thesaural. Some of the rationales for revision receive broad endorsement--current Theater Nuclear Weapons (TNW)[1] vulnerabilities and the need to rectify them, NATO/WP imbalances caused by increased numbers and sophistication of WP forces and doctrine, the need to tailor NATO's force structure and doctrine to the specifics of the European environment, etc. Granting that there are no rigid divisions or pure categories, one can discern four general groups of reasons: technological, domestic political, international political, and structural.

Given the pool of reasons for changes, a somewhat larger but still limited pool of general approaches to solutions emerges. For example, if the reason for revisions is that technological changes have occurred or are occurring that warrant new NATO concepts, derived approaches include: (1) Precision Guided Munitions (PGM) technologies and their influences, or (2) Tactical Nuclear Weapon technologies and their influences, with some subcategories under each.

To these approaches the authors of revised concepts often marry their military experiences, historical studies, doctrinal prejudices, and insights to produce concepts regarded as capable of healing NATO's

[1] The initials "TNW" are used here to refer to either Theater Nuclear Weapons or Tactical Nuclear Weapons and the particular meaning should be clear by the context in which the initials are used.

operational ills. Some individual concepts stand out, and others provide frameworks for incorporation of several schemes. Recurring patterns help make visible the constraints under which NATO operates and the resulting range of changes.

This Note samples from the spectrum of ideas available in the unclassified literature from American, English, French, and German authors. It presents synopses of several individual articles and distills these even further into tabular presentations intended to highlight the scope and extent of the different views.

Table 1 lists the sources. Proposals are noted by an abbreviation of the author's last name, with a superscript numeral added where a distinction among one author's multiple proposals is necessary. The articles cited were published in the 1970s or 1980s.

Table 2 categorizes the author's reasons for revisions in NATO's posture in one of four groups and presents the conceptual framework derived from these. The reasons are cataloged as:

- o technological
- o domestic political
- o international political
- o structural

Those authors who generally endorse the conceptual framework are noted to the side. The absence of endorsement by an author may indicate simply that the author's proposal did not deal with the concept in question.

Table 1
SOURCE DOCUMENTATION

Those symbols in parentheses indicate articles that have not been summarized in this Note. The concepts and views they put forward are illustrated in the summarized articles, but the weight of their support (in Table 2) should be noted.

Symbol	Author(s)	Article
(BO)	Ken Booth	"Security Makes Strange Bedfellows: NATO's Problems from a Minimalist Perspective," <i>RUSI Journal</i> (December 1975), pp. 3-14.
BR ¹	Paul Bracken	"Urban Sprawl and NATO Defence," <i>Survival</i> (November/December 1976).
(BR ²)	Paul Bracken	"West European Urban Sprawl as an Active Defense Variable," in R. Huber (ed.), <i>Military Strategy and Tactics</i> (New York: Plenum Press, 1975), pp. 219-230.
BU	David Buden et al.	<i>A Defense Force for NATO's Central Region</i> (Los Alamos Scientific Laboratory, Los Alamos, New Mexico: LA-5991-MS, 1975).
(BT)	Richard Burt	"New Weapons Technologies: Debate and Directions," <i>Adelphi Paper No. 126</i> (London: IISS, 1976).
(BZ)	Rear Admiral Sir Anthony Buzzard	"The Possibilities of Conventional Defence," <i>Adelphi Paper No. 6</i> (London: IISS, 1963).
CA ¹	Steven Canby	"The Alliance and Europe: Part IV: Military Doctrine and Technology," <i>Adelphi Paper No. 109</i> (London: IISS, 1975).
CA ²	Steven Canby	"General Purpose Forces," <i>International Security Review</i> (Fall 1980, Vol. V, No. 3), pp. 317-346.
(CA ³)	Steven Canby	"NATO: Reassessing the Conventional Wisdoms," <i>Survival</i> (July/August 1977), pp. 164-168.

Table 1--continued

Symbol	Author(s)	Article
(CA ⁴)	Steven Canby	"The Wasteful Ways of NATO," <i>Survival</i> (January/February 1973), pp. 21-26.
(CA ⁵)	Steven Canby	"Commentary: The Future of Europe and NATO's Outdated Solutions," <i>International Security</i> (Spring 1977), pp. 160-162.
(CA ⁶)	Steven Canby	<i>NATO Military Policy: Obtaining Conventional Comparability with the Warsaw Pact</i> (Santa Monica: The Rand Corporation, R-1088-ARPA, June 1973).
(CO)	Captain Anthony Coroailes	"Maneuver to Win: A Realistic Alternative," <i>Military Review</i> (September 1981), pp. 35-66.
(DI)	James Digby	"Precision-Guided Weapons," <i>Adelphi Paper No. 118</i> (London: IISS, 1975).
(DU)	Col. T. N. Dupuy (Ret.)	"The Problem of NATO Forward Defense," <i>Armed Forces Journal</i> (July 1981), pp. 64-67.
FI.	Robert Lucas Fischer	"Defending the Central Front: The Balance of Forces," <i>Adelphi Paper No. 127</i> (London: IISS, 1976).
GA	Pierre M. Gallois	"Western Europe: An Improper System of Defence" (lecture at RUSI, 31 January 1979) <i>RUSI Journal</i> (September 1979), pp. 12-17.
GE	Marc Geneste	"European Land Defense," <i>Comparative Strategy</i> (26 November 1980, #3), pp. 239-247.
GR	Colin S. Gray	"Deterrence and Defence in Europe: Revising NATO's Theater Nuclear Posture," <i>RUSI Journal</i> (December 1974), pp. 3-11.
HA	Lt. Col. Norbert Hannig (Ret.)	"Can Western Europe Be Defended by Conventional Means?" <i>International Defense Review</i> (No. 1, 1979), pp. 27-34.
(HO)	Michael Howard	"NATO and the Year of Europe," <i>Survival</i> (January/February 1974), pp. 21-27.
HU	Kenneth Hunt	"The Alliance and Europe: Part II: Defence with Fewer Men," <i>Adelphi Paper No. 98</i> (London: IISS, 1973).

Table 1--continued

Symbol	Author(s)	Article
(KO)	Robert W. Komer	"Ten Suggestions for Rationalizing NATO," <i>Survival</i> (January/February 1974), pp. 67-72.
LO	Jochen Löser and Otto Buchorn	<i>Portfolio on Area-Distributed Defense as an Alternate Defense Policy for NATO in the 1990's</i> , January 1980, translation from the German by H. W. Wessely (unpublished).
MA	Laurence Martin	"Theatre Nuclear Weapons and Europe," <i>Survival</i> (November/December 1974), pp. 268-276.
MI	D.M.O. Miller (Royal Signals)	"Strategic Factors Affecting the Defence by NATO of Western Europe: A Reappraisal," <i>RUSI Journal</i> (September 1980), pp. 37-43.
NU	Sam Nunn	Address of 11 September 1976 to New York Militia Association, reprinted in <i>Survival</i> (January/February 1977), pp. 30-32.
PA	E. W. Paxson, M. G. Weiner, and R. A. Wise	<i>Interactions Between Tactics and Technology in Ground Warfare</i> (Santa Monica: The Rand Corporation, R-2377-ARPA, January 1979).
(RE ¹)	Jeffrey Record	<i>Sizing Up the Soviet Army</i> (Washington, D.C.: The Brookings Institution, 1975).
(RE ²)	Jeffrey Record and Thomas I. Anderson	<i>U.S. Nuclear Weapons in Europe: Issues and Alternatives</i> (Washington, D.C.: The Brookings Institution, 1974).
ST	Henry Stanhope	"New Threat--or Old Fears?" <i>European Security: Prospects for the 1980s</i> (Lexington, Mass.: Lexington Books, D.C. Heath and Co., 1979), pp. 39-60.
TI	John C.V. Tillson	"The Forward Defense of Europe," <i>Military Review</i> (May 1981), pp. 66-76.
UH	Brig. Gen. Franz Uhle-Wettler	"NATO Strategy Under Discussion in Bonn," <i>International Defense Review</i> (September 1980).
(VI)	P. H. Vigor	"Doubts and Difficulties Confronting a Would-Be Soviet Attacker," <i>RUSI Journal</i> (June 1980), pp. 32-38.

Table 2

GENERAL CONCEPTS AND FRAMEWORK

Reasons for Revising NATO's Operational Posture	Framework	Endorsed By
<i>Technological</i> --changes in technology have occurred or are occurring that warrant a revision	<ol style="list-style-type: none"> 1. PCMs alter the calculus of conventional warfare, suggest new force structure. 2. TMs vulnerable to preemption; their use is uncertain; ineffective command and control. 3. TMs need to be incorporated into an effective political-military doctrine (not warfighting), and conventional forces better prepared for a nuclear environment. 4. TMs revolutionize warfare, need warfighting doctrine for their use. 	<p>(BT), (EZ), CA¹, (DI), HA, HU, LO, PA, UH BU, CA, CE, GR, HA, MA, (RE²)</p> <p>CA¹, MA, (RE²)</p>
<i>Domestic Political</i> --changes within NATO nations will affect resources allocated to NATO	<ol style="list-style-type: none"> 1. Pressures to reduce expenditures on defense will reduce funds available. 2. Pressures to lower manpower supplied to the military will have greater effect. 	<p>BU, HU</p> <p>HU</p>
<i>International Political</i> --		
(i) Intra-NATO--changes within NATO, in relations among the nations, necessitate changes	<ol style="list-style-type: none"> 1. U.S. strategic umbrella coverage seen as weakening. 2. U.S. conventional participation may become specialized, reduced, or assume a lower profile. 	<p>GE, HA</p> <p>HU</p>
(ii) NATO-WP--changes in the balance necessitate changes	<ol style="list-style-type: none"> 1. MFR (MBFR) or other arms control may require changes. 2. Perceptions of increased WP threat: surprise attack scenario; numbers and sophistication of WP forces; blitzkrieg doctrine. 	<p>HU</p> <p>BR¹, BU, CA¹, CA², FI, CA, GR, HQ, (KO), LO, MI, NU, PA, (RE¹), TI; seen more optimistically by: (BO), (VI)</p>
<i>Structural</i> --current NATO deployments and force structures are inappropriate for the task	<ol style="list-style-type: none"> 1. NATO force structure is geared for a long rather than a more likely short intense war. 2. NATO force structure needs to be tailored for the environment of Europe and the particular Soviet threat. 3. NATO's current deployment is: <ol style="list-style-type: none"> (a) too far forward (b) too far back (c) weighted too heavily in the Southern part of the Central Front. 	<p>CA¹, CA², FI, GR, MI, NU, TI</p> <p>BR, BU, CA¹, CA², FI, CA, GR, HA, HU, LO, MI, NU, PA, ST, TI, UH</p> <p>CA², (CO), DU, FI, (HO), HU, ST, TI, HA, NU, NU</p>

^aFor reinforcement of CA¹, see CA⁶.

^bFor emphasis on CA²'s ideas about restructured forces and reserve structure, see CA³, CA⁴, CA⁵.

Several proposals included in Table 2 do not have their articles summarized in this Note. They are referenced because they have similarities with the proposal summarized, and interested readers may trace original source material on a particular subject.

Table 3 presents the proposals as models, noting their stances on various elements. The set of elements is drawn from the proposals, or models, collectively. The elements are grouped somewhat arbitrarily into four categories:

- o nature of the deployment of forces
- o structure or composition of the defense forces
- o cost (if compared with current defense outlays)
- o contribution of air power

Within some categories, a proposal may incorporate more than one element. As in Table 2, absence of endorsement may mean that the author did not deal with the concept.

Table 3

17 NATO DEFENSE MODELS

Elements	BR ¹	BU	CA ¹	CA ²	FI	CA	GE	GR	HA	HU	LO	MA	MI	NU	PA	TI	UH
<u>Deployment</u>																	
Forward and layered defense		X	X				X	X	X	X				X			X
Distributed area defense		X					X				X				X		
Forward fortifications																X	
Urban defense	X															X	
Mobile reserves	X	X	X	X	X		X		X	X	X	X					
<u>Force Structure/Composition</u>																	
Heavy armor retention	X			X			X			X				X			X
Cavalry/infantry emphasis	X	X	X	X									X				X
Combat-unit size reduction	X	X	X								X		X		X		X
Integrated use of reserve/territorials		X	X	X			X		X	X	X		X			X	
<u>Weapons and Tactics</u>																	
Direct fire (PGM AT emphasis)			X		X				X	X	X		X	X	X		X
Attrition over maneuver	X	X							X	X	X		X	X	X		
AT barriers	X		X		X		X			X	X		X			X	
"Guerrilla" tactics															X		
Use of tac nucs		X					X	X	X			X					
Hardened fire positions			X													X	
Reduced C3 requirements								X	X							X	
<u>Air Contribution</u>																	
Significant consideration of air power			X	X	X				X	X		X					
<u>Costs (model compared with current outlays)</u>																	
Less																	
About the same		X								X							
More																	X

NOTE: The Xs indicate that the elements received specific endorsement by the author in their articles, or were clearly implied. However, the degree of emphasis varied greatly among authors.

II. SYNOPSES OF ARTICLES

Just as any attempt to force schemes into tables will compromise their value, so brief synopses will probably strip the hues from a color template and replace them with shades of gray. Even so, these present a fuller view of the author's reasons and suggestions than do the tables.

The synopses are organized in terms of three topics:

- o Why the author feels that change, revision, or a new concept is needed.
- o What the main tenets of the concept are.
- o How the concept would "work."

As far as possible, these synopses reflect the original author's opinions and not those of the summarizer, but readers are encouraged to read the original articles for a full statement of the author's views and caveats, because the articles vary markedly in the descriptions, details, and quantitative analysis presented.

Paul Bracken--"Urban Sprawl and NATO Defense: Models of West European Urban Sprawl as an Active Defense Variable"

WHY IS A NEW CONCEPT NEEDED?

NATO has failed to appreciate the implications for planning and force structure that the urbanization of Western Europe has brought about. "The terrain of Western Europe is now dominated by cities that have sprawled outwards and converged, becoming major obstacles to the free movement of military forces." Besides restricting open maneuver terrain, cities have inherent importance as "communications, economic, and population centres."

The outermost zones of European cities, resembling American suburban areas, especially as they tend to expand and merge into one another, offer attractive possibilities to attacking Warsaw Pact forces. "Having well-developed road networks, they would offer invading forces mobility and at the same time protection, both physical and psychological (since defenders might be reluctant to damage their own cities), while NATO forces would be hampered by a heavy flow of refugees clogging the roads as they fled before a Pact advance."

Villages and small towns in the border areas dominate the road network and are therefore probable victims of attacks. But of greater importance are the enormous urban concentrations one finds in the FRG. In some cases, particularly in the Rhine Valley, these might serve as massive barriers; but in others, notably in the Hanover area, they could provide corridors for the Warsaw Pact using an "urban hugging tactic," since they dominate the East-West road networks.

Sensitive political reasons (horrendous collateral damage possibilities) as well as bureaucratic ones (U.S. and NATO preoccupation with open-field fighting) have prevented NATO doctrine from dealing with potentials of urban warfare on a large scale. At the same time, the USSR has done so and is apparently prepared to conduct major operations in urban areas. The relative positions of the two potential antagonists can be seen partially in the stress put on long-range PGMs by NATO nations, as well as TNWs (both field and not urban weapon classes) and the continued Soviet commitment to combined arms forces having large numbers of close combat weapons. The Soviet position is clearly stated in its military literature (quoting Major-General A. K. Shovkolovich): "Under present-day conditions, combat action in a city will be a frequent occurrence. . . . In the course of offensive operations, troops will have to fight to seize a city every 40-60 kilometers."

TENETS OF THE CONCEPT

Given the likelihood of heavy fighting in NATO urban areas--because of the aforementioned shrinking of open areas and expansion of urban areas, dominance by cities of the road-net so vital to a quick WP advance (especially for its roadbound wheeled vehicles), and so on--NATO's distaste for urban fighting must be set aside and the best made of a given, if undesired, situation. One probable outcome would be the provision of appropriate weapons for urban warfare. "West Germany, for example, has already developed the small, short-range Armbrust anti-tank weapon, capable of being fired from a room without injury to its operator." An increased number of close-combat weapons and associated tactical training is highly merited.

On the operational level, NATO could:

exploit the conventional defense potential of cities, . . .
[which] would, in effect, create a super Maginot Line,
echeloned in depth across Western Europe, [and] . . . consti-
tute the largest man-made military fortification in history.

Large operational reserves are not to be neglected in such a scheme, and the types of field battles currently envisioned by NATO are indeed likely to occur. Nevertheless, the anti-tank, anti-mobility barrier provided by forces operating from the urban areas could provide valuable attritive and immobilizing functions.

HOW IT WORKS

The author does not lay out a specific operational plan for the utilization of urban systems for defense. Instead, he outlines the nature of the problem and provides a general concept. He suggests two specific lines of research. One is an examination of the possible tactics of defense and methods to counter Soviet offensive doctrine. Currently, "the preferred form of Soviet attack on a city is pivoted on hasty advances into the area by troops from the march." The second is exploration of methods to counter such assaults, very possibly by heli-borne troops.

Aside from the tactical issue, an operational approach involving the integration of urban defense into overall NATO defense plans should be formulated. "The successful fortified zones of World War II went by the names of Stalingrad, Leningrad, Breslau, and Poznan. It was in these and other cities that defensive forces degraded the effectiveness

of enemy weapons and limited his maneuverability." Their successes, measured by the delays they caused and casualties they inflicted, may foretell the pattern for some NATO defense of the future.

David Buden, John K. Hayes, Charles Hulburt, Joseph S. Howard II, Robert R. Sandoval--A Defense Force for NATO's Central Region

WHY IS THIS CONCEPT NEEDED?

The authors list a series of notable shortcomings in the present NATO strategy of flexible response:

- o a Warsaw Pact nuclear strike could destroy NATO's conventional and nuclear defense capabilities
- o current policy is an economic drain on NATO countries
- o deterrence is weakened by the uncertainty of NATO use of nuclear weapons for defense, while probability of escalation is high
- o extensive damage to Germany would occur either by fighting a conventional conflict, rolling with the WP punches and then striking back, or by suffering WP nuclear strikes against tempting large military facilities.
- o the dichotomy between preparing forces to fight a conventional or nuclear conflict is not resolved in NATO, and is not resolvable except by choosing one outright.
- o "the present command and control system is designed for conventional war" and therefore not suited for effective use of nuclear weapons should the need arise.

TENETS OF THE CONCEPT

The substitution of "nuclear firepower for massive manpower and a dense air-defense system to deny the Warsaw Pact air force an effective role over NATO territory" will have the probable effect of correcting

the above deficiencies. The WP would find it dangerous to mass forces for a blow (this would present nuclear-strike-worthy targets) and would have no worthwhile NATO targets (of a military nature) to strike or hold as hostages. The increased NATO defense capabilities would further deterrence in a theater sense and provide a less menacing force posture (for offensive operations).

Current technology can provide low-yield, terminally guided nuclear weapons systems in sufficient numbers to defeat any WP thrust. Composite combat units of some 30 men would guard forward observers who would direct nuclear fire upon approaching enemy units. Two other components of the defensive scheme are: "a dense, guided missile, area air-defense system and . . . sufficient mobile forces to reestablish the defense along the edges of corridors created if the offense uses large numbers of nuclear-biological-chemical weapons to penetrate the defense."

Current weapon systems are available to perform most of the requisite tasks. The integration of the various tools and restructuring of forces are doctrinal problems. Finally, the projected cost savings are on the order of 50 percent of current costs of NATO.

HOW IT WORKS

The four components of the system have already been mentioned. The composite combat units provide target acquisition and terminal guidance for the nuclear system and possess very limited local defense capabilities. Each would service a four km² area. There would be approximately 22,500 of these units within West Germany.

Some 600-900 missile units, each deploying perhaps four missiles would provide nuclear fire. These missiles would have maximum ranges of 75-100 km, deliver low-yield, high-radiation effects, and have a CEP of 100 meters, with terminal guidance. Quick delivery of fire (five minutes) is necessitated by the nature of the targets--WP maneuver units.

Mobile units constituted similarly to armored cavalry troops (4200 men) would be deployed one per 500 km². No counterattack role is seen for these units. They are, rather, mobile heavy reconnaissance forces.

The fourth component, an area air-defense scheme, would consist of missiles to protect against low flying aircraft (Roland type, supplemented by shoulder-fired weaponry), missiles to protect against medium height penetrations (improved Hawks), and perhaps the Vulcan gun system and complementary Chaparral missiles. Point defenses are not necessary because of the lack of large worthwhile targets (in NATO) built into the defense scheme.

Some sort of militia is deemed worthwhile "to provide local defense in areas behind the proposed defense." Their numbers (522,000 militia, rather than 373,000 regular troops) could presumably be drawn from deactivated regular forces or reserve forces.

This array of forces would be deployed homogeneously across a defensive zone 100 km deep and 900 km long, running along the FRG's border with WP countries. This zone would be broken up into nine 100 by 100 km sectors for a number of operational reasons. A near homogeneous distribution of forces, affected at points by terrain considerations, is desired. As soon as any WP penetration was detected, and this would be

aided by the extensive use of sensors as well as visual spotting, composite combat units would be able to use their integral conventional arms (they would contain a fair number of TOWs, two per unit, and machine guns) to dissipate minor attacks, and force major ones to coagulate and therefore present nuclear targets.

In this proposed defense posture, there is no attempt to preserve a nuclear "fire-break"--it is assumed TNWs will be used extensively by both sides. Should a major war occur, the authors hold out no solution for regaining captured NATO territory.

An adjunct concept in this proposal would have applicability to many other schemes. Nuclear weapons designed with "insertable nuclear components (INCs)" could be more widely dispersed and safely handled while nuclear security was preserved. Installation of the INC could be delayed until the threat of conflict was severe. Tied to a new command and control structure for authorizing the use of TNWs, this could increase flexibility, defense capabilities, and therefore deterrence.

Steven Canby--"The Alliance and Europe:
Part IV: Military Doctrine and Technology"

WHY IS THIS CONCEPT NEEDED?

Several arguments are put forward for the utility of conventional capabilities to defend NATO. The essential part is that a rough level of parity for all three legs of the NATO triad allows for truly flexible response (and the deterrence of the USSR or defense of NATO should deterrence fail). At the same time, "the existence of a conventional imbalance has tended to be taken for granted and the paradox of why NATO spends more and yet obtains less conventional defence than the Warsaw Pact has gone unresolved."

Restructuring of NATO forces is needed to mesh with the specifically European context and potential foes. "All-purpose" forces, an expeditionary organization, balanced logistic support, and individual rather than unit replacement in wartime are all symptomatic of NATO long-run capabilities, purchased at the price of greater short-term capabilities. Changes are required to counter Soviet forces "designed . . . to peak early, and for pencil-like armoured thrusts."

Soviet warfighting doctrine and organization reveal plans to conduct any future war in a modified blitzkrieg manner. Breakthroughs on narrow sectors, followed by deep armored penetrations at rapid rates of advance (perhaps 100 km per day), would use combat units "like drill tips on a high-speed drill--to be ground down and replaced until penetration occurs." Countering Soviet methods required restructured NATO forces, appropriate equipment (use of technology), and doctrinal changes.

TENETS OF THE CONCEPT

For NATO, "the specific problem is how to design a defence to counter Soviet tank tactics and to redress the attack's advantage over the defence," to fulfill the general requirement of preventing the occupation of significant portions of NATO territory by Warsaw Pact forces. The coincident use of new technologies, restructured forces, and new operating practices can make possible conventioned defenses.

Restructuring to provide for larger reserves can be achieved through:

1. "The organizing of anti-tank cavalry units, relatively simply equipped, and substituting them for the expensive mechanized infantry and tank battalions now deployed in linear fashion across the front." Current technology can give these newly created forces a much greater anti-tank punch.
2. The concentrating of logistics, to be allocated as needed in a war situation. Non-critical sectors would not need heavy logistic support, while those under heavy attack might need more than their integral capabilities could provide. Any overall net savings in manpower from logistics centralization could be converted into more combat units.
3. A new replacement system organized around unit rather than individual replacements, which is much more compatible with high-intensity warfare, and fits in with the "emphasis . . . [being] shifted from firepower, staying power, and sustained strength to shock-power and 'surgeability.'"
4. Manpower saved by the above changes and reserves being formed into cadre units, to be fleshed out upon mobilization. Perhaps as much as a tripling of combat units could be achieved.
5. The introduction of American reinforcements in groups of 100-200 men, instead of large-scale units with their equipment. Passenger aircraft could be used to bring in reinforcements close to parent formations, with which all equipment would be prepositioned. Battalions of four rather than three companies are suggested to accomplish this.

The increased number of NATO combat units, achieved through the doctrinal change to smaller, hard-hitting divisions (with divisional slices

roughly halved from approximately 40,000 to 20,000) tailored for a short and intense war, could provide the means for a forward, dense defense for NATO, backed up by sufficient maneuver elements.

HOW IT WORKS

Defensive dominance can be achieved through "a defence in depth provided by physical occupation of ground." This, in turn, requires that strong defensive positions, arrayed in depth, be manned by forces sufficient for the task yet not so large as to provide tempting TNW targets (and consume too much of NATO's available combat forces). New technologies can provide company-sized defenses with the requisite firepower and capabilities. New technology offers a way to release "the constraints upon present operating practices," rather than operate "on the margin" to improve existing practices. Among the weapon systems considered appropriate for the roles are: ATGMs (such as TOW), high/low pressure cannons (with fin-stabilized shells), close-in anti-tank weapons (such as Armbrust), minelets, laser/infrared guided artillery and mortar systems, warning sensors, limited-light intensifiers for night fighting, and so on.

A "checkerboard" layout of strongpoints is the proposed system for obtaining this defense in depth. It would be designed so as to "bog" down an armored penetration force until it is weakened and slowed sufficiently for a counterattack to destroy it and eject it. Restructured divisions (with 20,000 men division slices) could each provide 80 such strongpoints. An interlaced or checkerboard system would provide multiple sources of fire and observation. The pattern of strongpoints and

independent strength of each would confound the Soviet operational system, by requiring the Soviets either to assault myriad points in turn (using up precious time, stamina, logistic support--all contrary to deep penetration tactics), or to by-pass them and thus ensure vulnerability to serious harassment on their flanks, second echelon, and logistic support units.

Restructuring can give NATO 80 divisions [in varying categories of readiness, emulating the Soviet system]. If 60 were held in reserve[1] and 15 were placed near the border for forward defence, in addition to a strong five-division anti-tank cavalry screen, the average frontage (exclusive of cavalry) would be 50 km per forward division (and perhaps eight km deep). Because of differences in threat and terrain, divisional sectors like those in Bavaria might initially be 80 km wide, while sectors between Fulda and Hanover might be as low as 30 km.

Local operational reserves would be used to strengthen threatened forward units when necessary, in the process helping to identify major penetration attempts. When possible, these reserves would be reconstituted for reuse in the same role, and as the first tool for checking successful enemy penetrations of the forward area. General reserve forces could be used as a back-up in this critical latter role. Also, "tactical airpower can be designed specifically for penetration tactics. The role of airpower in the defense . . . should be primarily that of filling any gap created when ground forces are deploying or when they become disorganized."

With a checkerboard defense performing the required "holding" function of defense, local operational (counterattack) and general reserves

[1] Say, 25 in counterattack divisions (with many tank components and 35 in general reserve).

that of "restoring," and new technologies (especially standoff technologies) that of "attrition," restructured NATO forces should be able to offer a workable defensive counter to Soviet conventional (and conventional/TNW) threats.

Steven L. Canby--"General Purpose Forces,"
International Security Review, Fall 1980

WHY IS THIS CONCEPT NEEDED?

This article deals with restructuring of general purpose forces, or conventional ground, sea, and air forces. There are several implications for NATO force structuring throughout the article, but the suggestions for operational doctrine for NATO are stressed here.

In the maneuver form of warfare practiced by the Soviet army, effectiveness is determined by doctrinal quality and combat numbers. Against maneuver, highly sophisticated forces occupying positions of apparent great strength and relying on firepower and attritive effects will be quickly enveloped and the integrity of their defense destroyed.

Any technological edge the NATO nations may hold will have limited effects when they confront an opponent's technology at the same qualitative level. Much larger forces (two to three times as many divisions) are required. Furthermore, these new, larger NATO forces must operate under a new doctrine of maneuver warfare.

TENETS OF THE CONCEPT

The application of leading-edge technology absorbs funds better used for greater numbers of simpler, more reliable weapons systems and in certain cases may "induce counter-productive behavior (for example, sophisticated data processing communications can negate proper usage of armored forces)." Perhaps the most telling example of this is NATO tactical air forces. The inordinate costs of advanced tactical aircraft drain off funds needed for fielding European army reserves, providing increases in equipment levels, and so on. Just as important, "the value

of airpower is contingent upon the size of ground forces; a true trade-off between armies and air forces begins only after the army had adequate reserves. Air forces acting alone can only exact attrition."

The root causes of misdirected conventional doctrine, deployment, and equipment are the combined beliefs that "the main purpose of armies is to hold the line while respective homelands are attacked, and that the essence of ground combat is firepower and attrition." Conventional forces must stress a maneuver approach to warfare, in which the disruption of an opponent's plans and systems--the shattering of his cohesion--is far more critical than the physical attrition of his forces by means of firepower.

HOW IT WORKS

"A defense of Europe must be keyed to large mobile forces; but it does not mean that all forces must be standardized, in-being, or of high quality." There is an implicit bifurcation of the defense forces, and each may be dealt with in turn. The mobile forces are clearly seen as the instrument of decision: "Victory can only be obtained by the maneuver of heavy regular forces to break down the attacker's own cohesion." Restructured (and redesigned) tactical air forces deploying simpler, smaller, cheaper, and more numerous aircraft would be used in conjunction with ground forces to achieve a compound effect. Specifically, air strikes are most effective when used with mobile ground forces conducting a tactical offensive (either attack or counterattack).

The model for these mobile force operations is the World War II blitzkrieg, or the current West German doctrine. "Once they [mobile

West German forces] are on the flank or in the rear of the more ponderous Soviet formations, it is difficult for the Soviet High Command to maintain control in an ever changing environment, leading to a breakdown in the integrity of their system." The operations exploit enemy moves and positions through use of mobile (armored) forces concentrated into an operational reserve behind less well-equipped forces.

Border areas, physically more defensible, are to be held by "locally mobilized light infantry" or territorial infantry. These forces should be made "cheap and . . . numerous," and can be expected to engage and tie down large numbers of Warsaw Pact forces. Though they cannot be expected to hold territory for extended periods, they should be able to delay WP thrusts, free up regular formations, and mask these forces concentrated in operational reserves.

Robert Lucas Fischer--"Defending the Central Front:
The Balance of Forces," Adelphi Paper 127

WHY IS THIS CONCEPT NEEDED?

The author holds "that the greatest threat to an adequate NATO conventional defence is the [Warsaw] Pact breakthrough capability--which stems both from the aggregate Pact-NATO disparities in manpower and combat units, and from the organization, doctrine, and training of Pact forces. Similarly, the NATO response to the threat should not be purely one of increasing manpower or procurement." His analysis of the balance of forces shows a Pact-NATO ratio of:

1.09:1 in ground manpower
2.1 :1 in combat unit ratio
1.36:1 in men in major ground combat units.

The difficulty of delegating relative importance to these figures is discussed, and many of the missing factors are mentioned, among them: uncounted and miscounted units (and the inherent unreliability of the figures), weapons density in formations, weapons qualities, and so on. He deals at greater length with questions of mobilization, the effects and effectiveness of air power in changing the balance, and with the breakthrough problem. Whatever the theater-wide balance of forces, a Warsaw Pact attack that concentrated on one corps sector of NATO's defense, holding the rest of the front with a roughly 1:1 ratio, could amass as many as 235,000 men against a NATO corps of 40,000 men, using immediately available forces. Such a force difference would vary with mobilization schedules, and a single thrust axis would probably not appeal to the Soviet command. Even in modified forms, impressive local superiorities could be achieved by the Warsaw Pact forces. A forward distributed defense by NATO might exacerbate the threat of such a massing and attendant breakthrough.

The need for changes in NATO doctrine arises not so much from financial or manpower deprivation, but rather from "the relative strength in peacetime combat manpower, the Warsaw Pact's capability for reinforcement and, thus, in its resulting capability for a short war in the form of a massive offensive on one or two main attack axes."

TENETS OF THE CONCEPT

There are several suggestions made for doctrinal changes that, while worthwhile, are of a non-operational nature, such as "improvements in peacetime combat-support ratios" and changes in mobilization and reinforcement schedules and components.

A general, inclusive view of the ground defense of the Central Front of NATO is necessary, with greater "emphasis on larger reserves, mutual support between national forces, and flexibility in allocating arriving reinforcements." Included in this is the need for more cooperative work in intelligence and reconnaissance, to locate the most severe WP threats and breakthrough attempts.

Forward deployed NATO forces should not stress so much a static defense as one in which territory is traded for time, the attrition of WP forces, and the disruption of WP plans, timetables, and unit cohesion. These forward units would also serve as the first stage toward the identification of major WP thrusts. The employment of NATO air units would complement this defense scheme. A deemphasis of deep-penetration actions would result from a stress on the need for greater air activity likely to influence ground combat more directly and immedi-

ately. Thus, aside from air superiority missions over NATO bases and depots, air reconnaissance and subsequent strikes against major WP attacks would be given priority.

HOW IT WORKS

The role of forward deployed forces has already been mentioned; their form follows from this. Preferably mobile forces, able to "roll with the punches," would utilize precision-guided munitions in their many forms (anti-tank guided weapons, cluster-munitions, laser-designating equipment for targeting, etc.), delivered by the forces themselves, or more distant artillery and air forces. These forward forces would make use of "multiple and dispersed defensive positions . . . [and] passive defenses (barriers, mines, etc.) to slow and channel the attack."

The larger (operational theater) reserves called for would provide the means for halting any Warsaw Pact breakthroughs. As a concrete example, a force composed of the French and Canadian reserves, plus three divisions taken out of forward deployment (more specifically, the forward corps), constituted as an operational reserve would mean that "a threatened corps sector could be reinforced by up to the equivalent of five divisions, doubling or tripling its original strength." There are assumptions (noted by the author) made in such a case, about the swift identification of a major WP thrust, its delay, and the ability of the operational reserve to move to within effective distance of it. Such a reserve would increase the uncertainty under which the planning for a WP attack would take place regardless. This implicitly boosts the deterrent value of the defense posture.

General Pierre M. Gallois--"Western Europe:
An Improper System of Defence"

WHY IS THIS CONCEPT NEEDED?

The theme of the lecture is given by a quotation from Winston Churchill: "However absorbed a commander may be in the elaboration of his own thought, it is sometimes necessary to take the enemy into consideration." NATO policy must be governed by an appreciation of Soviet aims and strategy--something not now done.

Three assumptions about Soviet policies are made:

1. "Generally speaking, Russian attitudes and objectives derive from their past weakness and also from their present inferiority in technology, industry, and economy."
2. "The Soviet goal is world domination, but save a general--or great--war."
3. "The Soviet goal is world domination, and through war if necessary."

In the context of the last assumption, one must think of any war between Western Europe and the USSR as being one in which the Warsaw Pact initiates the conflict (Western constraints foreclose any possibilities of NATO initiatives), where that initiative allows for significant advantages of surprise, and where the Soviets would aim for a major victory (no small territorial grab). The Soviets might attempt to intimidate Western nations or isolate individual nations for exclusive treatment in turn. But the likelihood of conventional attacks on NATO nations (except, perhaps, Turkey) is dismissed by the speaker. In planning to counter just this sort of threat, NATO generals are accused of preparing to refight the last war. The Soviets would wish to utilize surprise to the fullest, and the massing of forces for an assault would

deny them this. The defeat of 1200 Syrian tanks by limited numbers of Israeli defenders in the 1973 Golan battles showed that "tank onslaught is no more a military panacea for land operations."

TENETS OF THE CONCEPT

Soviet operational policy can be analyzed from their military literature, exercises, and equipment. All of these stress the preponderant role of theater nuclear weapons, particularly missiles. Soviet missile accuracies have improved dramatically, allowing for decreases in warhead yields and a potential limiting of collateral damage. Collectively, these changes may mean that "the horror inspired by the perspectives of an atomic exchange is vanishing and that sort of war may appear intelligent because militarily decisive at a low cost in human lives and nonmilitary installations."

Thus, surprise paired with advanced Soviet nuclear missile weaponry, such as the SS-20, may be able to achieve the sudden and, to the Soviets, near-painless disarmament of NATO Europe. NATO forces, deployments, and doctrine are not prepared to cope with this possibility. West German forces are vulnerable to the point that "the destruction of offensive aircraft [West German, not including interceptors], caught in the open, on their fields, present less than 20 aiming points and that is some 40 projectiles," while West German land forces "present some 50 targets, which may be neutralized, or paralyzed, by 100 or 150 warheads, if caught by a surprise attack on their normal non-wartime location."

The types of forces necessary for the defense of Europe or, more correctly, the deterrence of Soviet aggression, are not conventional, general purpose forces. Rather, a regional nuclear deterrence scheme based on NATO deployment of survivable theater nuclear forces is the only workable defense for NATO.

HOW IT WORKS

The preeminent need is for "a permanently mobile atomic force, [which] would be the only one capable of denying the other side--for it has the initiative--the knowledge of where he would strike." The deployment of more aircraft or cruise missiles is not deemed sufficient because of the static basing of these systems. Submarine-launched systems would be very difficult to target and, therefore, more survivable. Also prescribed are "aircraft in permanent flight, underground depots, headquarters, and centres of communication."

Europe must be transformed into a sanctuary along the lines of the Soviet and American homelands to lend credibility to the deterrent. In such a situation, negligible conventional forces are required to test Warsaw Pact intentions in a conflict. Any strike against NATO would be major in form, and the conventional forces of little utility. Along the same lines, the neutron bomb (Enhanced Radiation Weapons) is described as "a weapon [that] would have been very efficient against German panzers in 1939-40," but of no use against SS-20s and their like. Similarly uninteresting is the issue of standardization within NATO, since this would be appropriate for a long attrition war--one that in the view of the speaker is very unlikely.

Marc Geneste--"European Land Defense,"
Comparative Strategy, 26 Nov 1981

WHY IS THIS CONCEPT NEEDED?

The proposals in this article constitute a response to a European (particularly French) belief that "the American fear" of nuclear escalation has led to a policy of "flexible response" with conventional forces and that the American "nuclear umbrella" is, in fact, a sham. "Given the available alternatives of defending Europe with nuclear weapons [in European hands], however, such a strategy [conventional forces-flexible response] is not only stupid, it is criminal."

Freeing Europe from its status as hostage to menacing Soviet forces "encamped at our [Europe's] door" can be accomplished by development and deployment of fairly large numbers of European controlled theater (or tactical) nuclear weapons, and a defense plan built around their use.

TENETS OF THE CONCEPT

The foundation concepts of the author are "the universal realization of the appalling vulnerability of infantry to nuclear radiation" and the belief that "conventional military operations of the infantry are impossible against modern nuclear artillery." Infantry is used as a generic term for conventional ground forces; artillery as any means of projecting explosive power some distance.

Citing Samuel T. Cohen and extrapolating from there, "one realizes that two 1 KT ER [Enhanced Radiation] projectiles--whether shells, missiles, or bombs--would literally 'clean out' all formations, be they armored or not, over a surface of six square kilometers." He compares

this firepower to that of 30 to 150 armored divisions. This overriding fact must shape European defense posture. After quoting Sokolovsky to the same effect, the author notes a critical need to develop "a 'second strike' potential against their infantry" to halt the Soviet ground offensive.

Deterrence would be furthered by the European possession of TNWs capable of:

- (1) Increasing the defensibility of NATO nations
- (2) Increasing the probability of the Warsaw Pact forces sustaining enormous losses by the effects of TNWs
- (3) "Bolting of levels of strategic and tactical deterrence" because any initial counterforce strike by the WP at European TNW forces would be nearly indistinguishable from a strategic strike.

HOW IT WORKS

The proposed posture first must provide the TNW "second strike" potential. Dispersal and camouflage are deemed sufficient, at current states of the art, to ensure survivability. Parallel to this, strategic nuclear forces are necessary "to block enemy recourse to escalation," and second strike capabilities are required here as well.

In the construction of a nuclear barrier defense, "the principle is nuclear firepower, the extreme strength and mobility of which will make a linear defense such as that of the First World War possible once again." Conventional forces organized along successive lines must force WP forces to concentrate, increasing their vulnerability to TNW strikes.

The linear defense must take place from protected underground positions. "Protection is the only chance for survival; anything moving on

the surface is irrevocably condemned to death." The author's final components of defense extend and complement his prior point, in their advocacy of:

- (1) Territorial forces assuring security behind the lines against all other forms of aggression.
- (2) An armored corps emphasizing mobility in the conventional sense, also equipped with nuclear artillery [located] . . . behind the "atomic killing zone."

It is thought that this corps would fulfill the mission of general counter-attack after the nuclear deluge.

The author's defense scheme is a mixture of two components. On the military level, the extreme, irrevocable efficacy of battlefield nuclear weapons thoroughly reshapes the future of land warfare. The second, political component should not be overlooked. A feared decoupling of U.S.-European strategic defense--a removal of the U.S. nuclear umbrella--prompts the raising of the whole issue and the desire for an independent European nuclear option.

Colin S. Gray--"Deterrence and Defence in Europe:
Revising NATO's Theatre Nuclear Posture"

WHY IS THIS CONCEPT NEEDED?

The underlying need for a serious revision of NATO's defense posture is "the fact that the Warsaw Pact perceives itself to be somewhat in the position of Imperial Germany in 1914--it must win rapidly, or meaningful victory will be unattainable," and NATO does not have the means to counter such a threat. Six "postural 'cores'" for revision are suggested, ranging from a theory of protracted, largely conventional war (say, 90 days) to that of prompt use of tactical nuclear weapons leading quickly to strategic nuclear exchanges.

The posture supported by the author, that of "a tactical nuclear war-fighting emphasis" presumes "either that (a) the Warsaw Pact would go nuclear very early on anyway, or that (b) NATO would inevitably lose a conventional war--short or protracted--hence the variety of conventional emphasising postures merely postpones the inevitable." The first belief can be derived from Soviet literature and field exercises, although this is not the thrust of the article. The second belief may be deduced from the relative sizes, organizations, and doctrines of the Warsaw Pact and NATO. New conventional weapons technologies, likely to be adopted by the WP as well as NATO, are deemed unlikely to greatly alter the balance in NATO's favor. From a political point of view, "a limited war in Europe is, for most participants, a contradiction in terms." For this reason, the author holds that "to threaten, credibly, to destroy an armoured assault with tactical nuclear weapons is not at all inappropriate to the aggression in question." A nuclear war-

fighting, or a denial posture, not an offer of a mutual suicide pact (massive retaliation) is considered the suitable posture given the stakes for Europe in any probable conflict.

TENETS OF THE CONCEPT

Military forces capable of quickly halting a WP attack, or of deterring it altogether, are required for the defense of NATO. Interdiction strikes, even nuclear, will probably not achieve such a goal.

To ensure that NATO does have available the capability for the nuclear annihilation of Pact forces, far greater attention than has been hitherto the case must be paid to the survivability and the flexibility of weapons (a wide variety of yields and of designed special effects) and to the agreed doctrine for prompt nuclear use.

The author advocates an "inflexible tactical nuclear response-- meaning a prompt resort to whatever variety and quantity of nuclear weapons are necessary in order to halt a Warsaw Pact offensive." The current TNW posture includes systems vulnerable to preemption, whose use, because of a lengthy command and control chain (determined by political choice) would be prompted by a desperate and flagging military situation. The author's revised TNW posture would lessen the chances of preemption, allow for the timely use of TNWs to destroy major WP formations in their starting positions (for the greatest effect and reducing collateral damage in West Germany), and, by endorsement of this doctrine, possess a greater deterrent value re the Soviet threat.

HOW IT WORKS

It follows from the theme of the proposed posture that TNW forces must be made more survivable and readily usable. Preprogrammed early use would be an offset to any increased vulnerability incurred by forward deployment (more readily usable).

It is recommended that the United States purchase "the new generation of nuclear warheads for the 155mm and 203mm howitzer tubes incorporating--eventually--'smart' technology. Also, the procurement of the vehicle-mounted, 75 mile range Lance is to be welcomed." The nuclear artillery, with a pre-arranged clearance for use in war, could strike quickly and with great effect at WP concentrations causing such damages that, with the additional conventional ground defenses holding back the remnants, NATO territory might remain inviolate. Specially tailored TNWs, wedding to new precision-guided technologies, can provide the immediate and critical firepower that conventional munitions are unable to muster.

Lt. Col. Norbert Hannig (Ret.)--"Can Western Europe
be Defended by Conventional Means?"

WHY IS THIS CONCEPT NEEDED?

The author holds that U.S. strategic supremacy will have disappeared by 1981, and from that point onward the American nuclear deterrent will cease to be an operative tool in the defense of NATO Europe (by deterrence). The use of TNWs is also considered unlikely, because of their control by the USA, and the desire of the USA not to cross the nuclear threshold. "The logical conclusion for Western Europe is, therefore, to equip itself with conventional weapons in order to be able to repulse an attack by conventional means."

The Soviet Union would wish in any conflict to incorporate captured industries and resources of Western Europe into the Soviet sphere's economic system. This presumed war for economic gain would make Soviet use of TNWs counterproductive and, therefore, unlikely. As for Western European nuclear weapons: "the possession of nuclear weapons is meaningless, since such weapons have no more than a threat value and could not be employed in combat." It is postulated that the use of nuclear weapons in Europe would destroy what it desired to protect (especially West Germany) or seize (in the case of the USSR).

TENETS OF THE CONCEPT

Since nuclear forces, either strategic or tactical, are incapable of defending NATO, conventional forces must perform this task. A continuous defense, in terms of time and terrain, not predicated upon warning time, is needed. The territorial integrity of NATO and its entire

population would be maintained by a "defense [which] must therefore start right at the forward-most edge of the zone to be defended and be effective even in the absence of warning and whatever the time chosen by the enemy to attack."

There are two critical concepts around which the proposed defense scheme is structured. The first is that

attack and defense are contrasting types of combat each governed, together with its associated weapon systems, by a different set of principles. The fundamental difference lies in the simple fact that the attacker always has to break cover in order to advance and thus becomes a target for the defender who can remain under cover.

The second concept is that the evolution of weaponry beginning with the Panzerfaust (an infantry operated anti-tank rocket used toward the end of the Second World War) has favored the defensive capabilities of infantry forces against those of armor (tanks). For the author, a comparison of the relative effectiveness of tanks and second-generation anti-tank missiles shows conclusively that tank assaults can be broken up and breakthroughs prevented with ATGMs. Furthermore, "the simplicity of the weapon systems themselves and their operation allows the use of reservists and militia which are resident in the defense zone in adequate numbers."

HOW IT WORKS

In the event of a Warsaw Pact attack, there would be a simultaneous evacuation of the civilian population from the border area and mobilization of militia units made up of reservists living in that zone. These militia units would be equipped as the Swiss are, with the notable

addition of large numbers of anti-tank weapons, many mounted on carrier vehicles (perhaps wheeled, since the area is fairly well roaded, and wheeled vehicles would be easier to operate and maintain).

Communications would be based on existing civilian systems (telephone, radio, and television), but the nature of the defense scheme makes this somewhat less critical than it might seem. Every militia unit would set about destroying any unit crossing the frontier. The air defense would be provided by fixed installations, manned by regulars, complemented by militia-operated low-level anti-aircraft weapons such as Fliegerfaust. Regular troops would be brought up to occupy pre-selected defensive areas and relieve and coordinate the border defense.

Kenneth Hunt--"The Alliance and Europe: Part II:
Defence with Fewer Men," Adelphi Paper 98

WHY IS THIS CONCEPT NEEDED?

The author's point of departure is that strong pressures will probably result in fewer conventional forces for NATO's Central Front in the future. The amount of their national treasures the NATO nations will be willing to spend on defense is likely to decrease, manpower levels will fall partly as a result of this as well as the unpopularity of a national military service. U.S. forces in Europe may well be reduced, perhaps as part of an MFR agreement.

The importance of these pending reductions is that conventional forces play a critical role in NATO's general strategy of flexible response. "So, unless new risks are to be taken, some advantages ought if possible to be derived from new defence postures, new technologies and structures to match, or else some alternative (or complementary) compensation must be found through MFR."

Other probabilities derive from future lower conventional force levels. NATO will need to rely more heavily on reinforcements, reserves, and warning time. To prevent deployed forces serving as mere nuclear trip-wire mechanisms, a reordering of conventional forces will be necessary that can use reinforcements and reserves for greatest effect.

Six models are outlined and discussed:

1. Restructuring
2. Rapid reinforcement in crisis
3. More reliance on reservists

4. Simple reduction
5. U.S. forces in reserve
6. Defence in depth

Except for the last one, operational considerations are touched upon only lightly. It is noted in the fifth model that should U.S. forces be concentrated as a central operational reserve, they could serve as a counterattack force to guard against WP breakthroughs and would be closer to the scene of most probable need (the North German plain). The sixth model turns over the most new ground for operational concepts.

TENETS OF THE CONCEPT

The sixth model, providing for a defense in depth, "attempts to provide a concept of deployment suitable for a time when arms control is beginning to take effect, or must be legislated for or encouraged, without forfeiting some capacity to defend strongly." It is a defense posture that allows for a low U.S. profile, including reduced forces and dual-based units.

A layered defense in depth would be created by including "German militia and other units in the forward area defences, with active army formations providing the main weight of the defence, and territorial and other units in defensive and supporting roles in depth." Cost savings would be achieved by "reducing the number of active army formations, placing reliance on reservists to strengthen them in crisis, and militia to augment them in peacetime." Some of these savings would be spent on the new technology weapons necessary to make the militia and territorial units workable defensive forces.

The scheme is for a defense of low profile from the border back. Forward forces would be an unthreatening presence on the border, providing testing, warning, and attritive functions in the event of a major WP attack. the regular army units forming the second layer would constitute the heavy defense, with reinforcements from the U.S. and reservist expansion of cadre units. The third layer would provide rear-area security and allow for the greater concentration of regular forces in the second layer. "The keynote, then, is deterrence in the forward area provided by sufficient military presence to act as a trip-wire for heavier defence in crisis."

HOW IT WORKS

The first, or forward layer, whose major roles have already been mentioned, would at best delay and certainly could not defeat a WP attack. An intermixing of regular with militia units (these latter based on cadres to be filled when necessary) would be most fitting--the regulars servicing the more demanding weapons and communications systems, the militia exploiting their greater familiarity with native areas. Weapons utilizing new technologies, such as minelets and bomb-lets to provide barriers, new electronic sensors, lightweight ATGMs, and the like, promise to endow militia forces with much more combative and intelligence gathering power than has hitherto been the case.

The second layer "should chiefly consist of heavily armed mobile formations, mechanised and armoured and having their own nuclear capability and all advanced technology." A meeting-action and counterattack role is foreseen for such forces and their complementary reinforcements.

The third layer, perhaps built around the German Territorial Army and militia units, would serve "anti-tank, anti-airborne troops, air defence, light engineering, policing, communications, bridging transport and other logistic tasks." Again, these units would be formed around cadres and filled when necessary and would perform a number of chores closely akin to civilian jobs, freeing up regular forces for more critical roles.

This defense in depth posture is not one designed for compatibility with TNW warfighting; neither is the current NATO posture. If used, tactical nuclear weapons would be used as political tools in intrawar "negotiations" rather than as battlefield weapons, because this would probably necessitate their use on NATO territory. This posture would be preferred only within particular political situations such as MFR agreements or limited forces zones near the NATO-WP borders.

"Distributed Defense," according to Major General Jochen Löser (Ret.),
Ex-commander of a German division in Hannover

WHY IS THIS CONCEPT NEEDED?

According to Löser, NATO's current strategy of "Forward Defense" is inadequate either to deter an attack by the Warsaw Pact or to defeat Pact forces if deterrence fails. Löser puts forth a rather large number of reasons for the probable failure of such a strategy, including:

- o Force ratio insures a WP victory whether or not NATO receives adequate warning
- o Force disposition is inadequate to cope with the initial attack and subsequent breakthroughs
- o NATO's reliance on mechanized warfare in areas unsuited for such combat and against an adversary with a superiority in like systems insures its defeat
- o NATO's current strategy does not protect territory or population from either direct external attack or internal subversion and terror
- o Strategic reserves from overseas cannot react in time to effectively meet a WP attack and may give rise to its escalation

TENETS OF THE CONCEPT

The objective of Löser's alternative strategy is basically to (1) achieve a stable balance of power, (2) protect the West German population, and (3) prevent a nuclear war. This objective is to be realized by the adoption of an "Area-Distributed Defense" (Raumdeckende Verteidigung). Its primary tenets are as follows:

- o Nuclear attack can be deterred by not presenting the WP with large, nuclear-worthy targets; small, well-dispersed combat units will replace large armor concentrations
- o Fire is to be preferred over maneuver, since only fire destroys armor; technological developments in anti-tank weapons give the defense an advantage
- o Effective use of terrain in conjunction with artificial barriers of all kinds will force the enemy into target-rich concentrations. The defender, in contrast, will be protected from enemy fire by his dispersal and the utilization of cover and concealment
- o High technology will also provide the defense with an effective target-acquisition capability, as well as a secure communication system between forward observers and firing positions

HOW IT WORKS

This concept is based on the use of large numbers of small combat units for the most part, ranging in size from a company to a brigade, operating in discrete defense sectors of responsibility and designed to engage in small-scale, partisan-like combat. The enemy is to be continuously engaged by the defense network, and at three levels: (1) in the border zone, back to about 60 km; (2) in an area zone, back to 150 km from the border; and (3) in a homeland defense area covering all of the FRG west of the border zone.

Forces to be assigned to the above zones are characterized as "hunters," from the fight and survive nature of the expected engage-

ments. There are to be three basic unit sizes: (1) A Hunter Company, responsible for an area of up to 90 km² and equipped with four rocket systems for use against tanks and infantry; it carries out the tasks formerly assigned a full battalion. (2) A Combat Hunter Group composed of three hunter companies, an assault company, and a blockade company; it is responsible for an area of up to 270 km² and uses medium to heavy rockets to handle tasks formerly assigned a brigade. And (3) a Hunter Brigade made up of three combat hunter groups, a heavy rocket (techno) company, and an attack helicopter company; the brigade is responsible for up to 800 km² and handles tasks once assigned to a division. It can operate in the border zone as well as throughout the rest of its defense sector and, under certain conditions, can be used in counterattacks to regain lost territory.

Löser would form his light-infantry forces from regular and reserve troops who would train in the area of their responsibility. He estimates that the fortified border zone could be handled by some 30,000 such troops organized into 50 combat hunter units; these forces he would designate "shield forces" (Schildkrafte). In the maneuver areas west of the border zone would be the "sword forces" (Schwertkrafte) made up out of existing German and Allied armored and mechanized brigades.

These forces would use terrain, obstacles, fire, and hit-and-run tactics to attrit and halt the attack short of the Weser-Lech line.

Laurence Martin--"Theatre Nuclear Weapons and Europe"

WHY IS THIS CONCEPT NEEDED?

Because of the nature of the weapons and the escalatory possibilities their use would raise, "it is . . . all the more reprehensible that doctrine for the use of tactical nuclear weapons is ill-developed and that the forces required have been carelessly designed and deployed." TNWs were originally seen as a band in a spectrum of nuclear weaponry to be used massively by a (nuclearly) supreme United States against Soviet aggression in Europe. Political and bureaucratic demands (within the armed forces as well) have ensured their continued existence in NATO, but a serious, accepted doctrine for their deployment and use is lacking.

"The real debate [re TNWs] is over what constitutes the best deterrent and what would be the least intolerable strategy to execute if deterrence fails." There are current deficiencies in several areas:

1. An agreed political and military doctrine for "follow-on" use of TNWs after an initial "'militarily meaningful' demonstration" does not exist.
2. Currently stockpiled TNWs are not tailored for effective use, many having large yields, poor accuracy, and difficult command and control procedures.
3. NATO's TNWs are vulnerable to preemption by Warsaw Pact forces or seizure by terrorists.

Even with these deficiencies and the strong likelihood that problems with TNWs will remain, their presence will nevertheless continue to be required to provide a deterrent to Soviet TNW use and as an option should conventional defense fail.

TENETS OF THE CONCEPT

Any proposed solution, in terms of TNW doctrine and equipment, must meet several stringent criteria:

1. The forces must be capable of deterring Soviet use of TNWs but, should this deterrence fail, their use should serve "the object of denial rather than punishment . . . because it looks to the preservation of Western Europe and seeks a strategy worth implementing even if deterrence fails." Soviet incentives for restraint must be preserved even with NATO use of TNWs.
2. The initial NATO nuclear strike must serve as a warning of severe potential blows should the WP continue operations by demonstrating the political will for TNW use and by being militarily effective (preferably halting a WP advance).
3. Political acceptability must be provided for by ensuring no early recourse to TNW use and, in the event of their use, employment beyond the borders of NATO nations.
4. "The forces . . . must be quickly responsive, fully subject to the highest possible level of political and military control, and impervious to seizure or sabotage in peace or war."

Two elements demanded, beyond the framework of TNW improvements, are "adequate conventional force to obviate the need for precipitate action" and "a firm backing by selected strategic forces," which is necessary for the deterrence of the USSR and European cooperation (with the United States) at all levels of defense.

HOW IT WORKS

Suggested by the requirements above are certain general features. The number of weapons might be reduced and made more mobile, to reduce chances of preemption or seizure, while decreasing command and control problems. Authorization and decision for TNW use should come from the top down, which would require that political leaders be kept abreast of battlefield situations to allow for timely use of the weapons. Because

TNW use would follow the deterioration of NATO battle fortunes, as well as the other implicit requirements derived from criteria listed above, a fairly large-scale interdiction ("200-300 km behind the battle") would seem to suit the bill. Target clusters such as airfields or supply depots would possibly be appropriate.

The author proposes a nuclear covering force that "would constitute a theatre force intended to serve as a middle element in the NATO 'triad' of conventional, theatre nuclear and strategic nuclear forces." The use of such a covering force would be governed by the military situation, rather than by tactical exigencies, and would therefore be located further back from the battle area, providing greater security and control. Weapon systems currently available suitable for such a role are: small numbers of aircraft (reducing the QRA forces), the Lance or improved Pershing battlefield missiles, and perhaps a theater employment of Poseidon missiles.

It is admitted that even large-scale interdiction may have but a delayed effect on battlefield situations, but it is held that the delay and possible elimination of second echelon units, for example, coupled with usable NATO conventional forces and possibly (limited) battlefield nuclear weapons (such as artillery using special effect TNWs), could cause the USSR to rethink the wisdom of continuing their attack. At the very least, the nuclear covering force would offer greater NATO survivability for its TNWs and a possible limited-option nuclear capability. This would improve its war-fighting potential and hence its deterrence.

Current deployed weapons systems could be used for the covering force, but nuclear weapons tailored for projected contingencies (such as

Enhanced Radiation weapons, small yield weapons with improved accuracies, and so on) would be worthwhile. More effective command and control procedures for informing political leaders of the military situation and conveying their orders would be desirable, while doctrinal changes in general purpose forces to prepare them for possible nuclear war environments would be very prudent.

Lt. Col. D.M.O. Miller--"Strategic Factors Affecting the Defense
by NATO of Western Europe: A Reappraisal"

WHY IS THIS CONCEPT NEEDED?

Col. Miller believes that NATO's current strategy is hopelessly inadequate and outmoded. He cites the following reasons for his opinion:

- o NATO and the Warsaw Pact may have reached the point of mutual nuclear deterrence but no attempt has been made by NATO to regain a strategic conventional initiative.
- o NATO's assumption that its superior technology will make the difference may not be valid, since "it has been shown in practice that the application of science does not win war."
- o NATO's tactics, based on the use of "covering troops," "main positions," and "mobile reserves" are obsolete, and will result in NATO forces being "delivered to the Warsaw Pact neatly tied up in battalion-sized bundles."
- o NATO reinforcements and reservists will battle their way eastward (through a flood of refugees heading in the opposite direction) in time to be "collected piecemeal by the advancing enemy."

TENETS OF THE CONCEPTS

Miller believes that the entire defensive structure of NATO must be overhauled and all of Western Europe turned into an armed camp. The basic concept consists of the following:

- o A guerrilla army will be formed from a mix of regulars, territorials, and reservists and will operate at three levels: (1) grass roots (home areas), (2) a larger area of responsibility, and (3) national level forces (using guerrilla methods). All three levels will be raised and trained in peacetime and ready to fight at a moment's notice.
- o In addition to the guerrilla army operating throughout the FRG, there would be a regular Allied force stationed, in depth, along the border to prevent localized "nibbling" attacks.
- o The WP would not be engaged at an obstacle line but would be attrited and harassed from all sides throughout the country; major battles would be avoided.
- o Guerrilla units would be responsible for the defense of a particular area and be capable of operating, without outside support, for up to three months.
- o Regular units would be reorganized into combat battalions, as the basic fighting unit, using lightweight vehicles (no tanks or heavy artillery).

HOW IT WORKS

Col. Miller's concept involves the gradual wearing down of an invading WP force by constant fire, with enemy troops being the first priority target, followed by equipment and general morale. The enemy would be continually faced with blown bridges, blocked roads, and disruption of communications. The cities would be used as guerrilla battle areas as well, and the ground battle would be assisted by a guerrilla-

like air force that "can appear from nowhere, attack, and then disappear" without the need for runways.

The guerrilla force, at all levels, would take advantage of technology in the form of lightweight AT and AA weapons, and electronic equipment for communications and target surveillance and acquisition.

Senator Sam Nunn--Address before New York Militia Association,
11 September 1976

WHY IS THIS CONCEPT NEEDED?

The self-interests of the United States require a firm and permanent commitment to the security and freedom of Western Europe, and have been canonized in the NATO alliance. A strategic and tactical nuclear deterrent exists and will be maintained for the protection for the alliance, but the third leg of the NATO triad, conventional forces, is in questionable shape. "To put it bluntly, after twenty-seven years of collective investment on an unparalleled scale, it is still questionable whether the United States and its European allies could muster sufficient military might in time to defeat a determined conventional Warsaw Pact invasion of Western Europe."

Specific problems that require remedy are: inferior numbers of deployed NATO combat forces on the Central Front; a NATO posture stressing maintainability of combat and protracted war with insufficient thought given to countering a Soviet blitzkrieg; difficulty and delays inherent in reinforcement and resupply schedules for NATO (especially trans-Atlantic movements); and policies, doctrines, and forces that attend the misconceived NATO posture. In tandem with the current NATO posture, "the Soviets and their Warsaw Pact allies have prepared to wage a short war of singular violence, preceded by little warning, and characterized by a massive blitzkrieg which seems aimed at overwhelming NATO forces deployed in the centre before they can be augmented from outside the European theatre."

TENETS OF THE CONCEPT

An initial consideration, upon which others would hinge, would be the revision of the "likely duration of a future conflict in Europe and the amount of warning time NATO could prudently count on prior to the outbreak of hostilities." The speaker suggests a revision from the current levels of 23 days warning and duration of 30 days--six months to a few days warning and two to three weeks duration for the war. There are profound implications in such a change for virtually all areas of NATO planning, but these are necessary to counter the most likely threat.

Though short, the war would be intense. Linked with the advent of PGMs and noting the example of the 1973 war in the Middle East, projected attrition rates in men, equipment, and supplies would be very high. NATO would be well advised to remedy "the chronic shortage of ammunition and other consumables in theatre." Additional firepower in the forms of artillery, anti-tank, and air-defense units are required to counter more numerous WP forces.

In line with the short, intense war thesis, more forces should be converted from "tail to teeth," while logistics, like other arms and equipment, must take on a more international cast to allow for interoperability.

HOW IT WORKS

For operational purposes, the most important proposal the Senator makes (aside from the matter of warning time and duration of conflict) is in regard to "the existing mal-deployment of NATO ground forces in

the centre." NORTHAG should receive a greater share of NATO ground forces relative to CENTAG, because of the nature of the terrain (the North German Plain, considered as better suited for blitzkrieg operations) and the greater numbers of WP forces facing it.

NATO's posture would be enhanced by "not only a northward redeployment of major U.S. forces but also the eastward relocation of major NATO combat units to their assigned wartime positions." This rejection of current NATO operational planning is based on the belief that NATO forces, having been pushed back from forward areas and having suffered losses (morale as well as physical) and defeats, could probably not "successfully halt, regroup, defeat, and eject from the Centre a vastly larger enemy flushed with the thrill of victory." Rather than "roll with the punches" and riposte with reserves, something that would entail costly refighting over lost terrain and greater collateral damages to West Germany, the Senator proposes to redeploy rearward forces forward, "to wage the main battle along the inter-German border." The assumption is made that improved NATO forces would be able to halt and indeed prevent any WP penetrations of the front, even allowing for "local counter-attacks across the border."

E. Paxson, M. Weiner, and R. Wise--Interactions Between
Tactics and Technology

WHY IS THIS CONCEPT NEEDED?

Because of the continued threat of the Warsaw Pact and the generally acknowledged superiority of the armor strength of the Warsaw Pact forces, the authors believe that NATO should more fully utilize the recent high-technology developments in precision-guided munitions, sensors, combat vehicles, communications techniques and equipment, etc. as a counter to that threat and capability. They imply that the application of these high-technology systems is a more cost-effective way to combat the WP's armor superiority than the use of mobile heavy armor (as planned for NATO's current forward defense strategy).

TENETS OF THE CONCEPT

As part of an illustrative approach to assessing the merits and limitations of new concepts and technologies for countering the WP threat, the authors propose a modification of an initial forward defense which they call "Distributed Area Defense" (DAD). The concept described here is only one example of a Distributed Area Defense System, but it meets all or most of the basic requirements. Its basic tenets include:

- o Denying the enemy use of those main invasion routes that give him high rates of advance and limiting his ability to use cross-country routes, particularly those providing cover.
- o Use of small units distributed throughout the battle area.
- o Attrition and delay of enemy forces (through the use of ambushes) rather than by the retention of specific terrain.

- o Small distributed combat units with enhanced mobility to allow them to relocate quickly without becoming decisively engaged.
- o At least two primary weapon systems, one direct fire and one indirect fire, both capable of delivering a high rate of fire over a short time and having a high degree of effectiveness against armor.

HOW IT WORKS

The system is built around the development of an experimental squadron-sized force, of some 900 men, consisting of three troops, each with three platoons. Their firepower is derived from two anti-vehicle systems: (1) a direct-fire, laser beamrider missile system; and (2) an indirect-fire system based on a mortar-fired round, using a hot-spot sensor, operating in conjunction with an elevated (tethered rotor), imaging infrared sensor, for target detection and acquisition.

The combat units are responsible for the defense of particular assigned areas with which they have become acutely familiar through peacetime exercises and training. Direct-fire weapons are to be used by highly mobile motorcycle units, which will cover main roads or trails in forests or wooded areas. Indirect-fire weapons will be disposed where they can obtain sensor and weapon coverage of main roads through their areas of responsibility (they may sometimes use small towns and villages).

The mission of both types of units would be to disrupt, disorganize, delay, and attrit those enemy forces penetrating the forward security zone in their area of responsibility. This would be accomplished

by a continual series of multi-directional ambush and harassment attacks on the enemy columns, forcing him to either slow down and attempt to clear out the defenses or accept the attrition as he continues, at speed, along his planned invasion routes.

Henry Stanhope--"New Threat--or Old Fears?"[1]

WHY IS THIS CONCEPT NEEDED?

This author's article includes a general examination of the late 1970s Warsaw Pact-NATO balance, and perceptions of it, prompted by reassessments such as the Nunn-Bartlett reports of January 1977. "Perceptions of the balance can change more swiftly and dramatically than the balance itself, and with results that are potentially as significant." The few suggestions he outlines for new NATO operational defense postures are warranted because of the "allied deficiencies in a sudden-attack scenario." Quantitative and especially qualitative increases in Soviet army forces facing NATO, as well as the somewhat laggard pace of projected NATO reinforcement schedules, form the backdrop for needed NATO changes.

TENETS OF THE CONCEPT

Although it seems that a consensus has arisen among politicians and analysts that a calculated, premeditated strike by the Warsaw Pact into Germany and NATO is unlikely, "more credible is the 'conflict arising from miscalculation during a period of tension' [McNamara's words]." In such an event, WP forces would use "neutralization of the battle-field" techniques, or a Soviet version of the blitzkrieg.

NATO must develop plans and a posture to stave off rapid WP victory, to allow for the slower NATO reinforcement schedule, and a

[1] Not included in Table 3 because it does not suggest a separate option, but covers three alternatives.

redressing of the force balance in Central Europe. "But to expect a 'quantum jump' in firepower or manpower--if it were available--or a large-scale redeployment of forces in West Germany, might be unrealistic." Instead, NATO should look to an operational use of forces to buy time in case of war.

HOW IT WORKS

Three suggestions are put forward. The first of these is that of Senators Nunn and Bartlett, that a full frontal defense should be presented to the WP, by moving forward NATO forces positioned near the Rhine. Though this would delay the WP forces in the border area, it would make for an even more vulnerable overall NATO position, since any breakthrough could lead to a complete NATO collapse. In a crisis situation, the bold face might help, and any initial rebuff of WP forces might make the Soviets think twice, but this would be terribly risky.

A second suggestion might be incorporated in the first. Fortifications along the frontier would bolster forces and must include at least the costs, probable unpopularity of the idea, and implicit acceptance of the division of Germany.

The third and final alternative put forward is a concentration on the rear rather than the border areas. "If SACEUR had a strong mobile theater reserve to work with (in addition to the French and Canadians) he could switch it to that area of the battlefield where the punch had struck." Corps troops in forward areas might be replaced by reinforcements (or reservists) and be constituted into such a reserve. Nevertheless, even if WP breakthroughs were identified quickly enough and were

intercepted by this mobile reserve, the defeat of any one or more (and this is by no means assured) would not necessarily halt the general WP offensive. The author notes that "the task of regaining lost space from an enemy as powerful as the Soviet Union, with reinforcements to draw upon and a supply line overland to Russia, can be made to sound daunting."

John C. F. Tillson, IV--"The Forward Defense of Europe"

WHY IS THE CONCEPT NEEDED?

The essence of the author's argument is that NATO must "develop a way to slow a Soviet penetration of the forward defense area while simultaneously providing operational reserves of sufficient size, mobility, and skill to counterattack the inevitable Soviet penetration." He accepts the (primarily) political need for a policy of "forward defense" but contends that NATO and Warsaw Pact force levels and doctrines pose serious problems.

It is noted that:

1. NATO's plans to halt Soviet penetration close to the border, with attendant dispersed, near-linear defense, are unlikely to succeed.
2. There are insufficient NATO operational reserves for counterattacks.
3. There are insufficient NATO peacetime preparations, given the possibility of WP surprise attack.

TENETS OF THE CONCEPT

Peacetime work on prepared defenses, along with doctrinal changes in use of reserves and active forces, are the keys to the author's alternative posture.

Terrain modifications in the extended border area to increase the difficulty of attack, passage, and resupply are more cost-effective in terms of NATO-WP effective force ratios in the border zone than creation and maintenance of additional NATO divisions. Defensive preparations increase a defender's effectiveness (in target acquisition, survivabil-

ity under attack) and decrease an opponent's speed of operations. A prepared defensive zone along the border would:

1. Slow WP advance
2. Cause severe attrition of WP forces
3. Allow NATO commanders time and evidence to assess major penetration attempts
4. Give more time for the concentration of NATO mobile forces for counterattacks.

The necessary NATO force modifications would utilize forces in being. A reversal of the roles of active and reserve forces is foreseen. NATO reserve forces would be given missions primarily in the defensive zone, with the advantages that:

1. The missions in the zone are inherently less complex
2. Training could take place in assigned defense areas, making for greater familiarity with the ground and assigned tasks.
3. The support structure for defensive zones manned largely by reservists would be less demanding.

The reserve forces might be molded around, or tied to, the 30,000-man German border police, the Bundesgrenschutz, or attached to NATO divisions near the border.

For this role, active NATO units, poised on the western edge of the defensive zone, would serve as counterattack forces. A certain portion of the active forces would be siphoned off to form a cadre of "stiffening" forces and for coordination purposes in the defensive zone.

HOW IT WORKS

A two to three-year program is proposed. Initial steps are landscaping or terrain modification, which would eventually encompass a

defensive zone running the length of the border (some 800 km) and extending to a depth of 40 km, varying according to specific terrain. Perhaps 32,000 km² (13 percent of the FRG) would be included in the zone, though the actual positions (c. 2000) would occupy only a minute portion of this (.12 percent of the zone), allowing farming and other activities to continue. The estimated costs of \$5 billion (FY 1981 dollars) for construction and procurement "would be apportioned among the NATO members as NATO infrastructure costs."

"The program would include forestation, walled terracing, construction of recreation and irrigation lakes and ditches, and hedgerow planting." Construction projects such as roads, railroads, and bridges would be fitted into the program, and most provided with prechambering for demolition charges. These latter preparations would allow for the preservation and continued peacetime use of facilities by civilians, and at the outbreak of the war by friendly military forces until their destruction to impede WP advances and resupply attempts. Work on prechambering projects is currently under way, but with (for example) 12,000 bridges in the proposed defensive zone, much remains to be done.

Minefields and other barriers are largely eschewed, for the reason that should a near-war crisis abate, their removal is quite costly. The use of cities and towns as active obstacles along major lines of advance is briefly considered.

Defensive positions made of "precast, reinforced concrete" placed in "optimum defense locations" are proposed. They would function as points from which to observe and direct fire upon obstacle locations being threatened or compromised by WP forces. The author believes their

decreased vulnerability to fire effects outweighs their static nature and probability of known and identified location. The defensive positions (c. 2000) would vary from small observation posts to larger tank and anti-tank positions in wooded and open areas.

A more secure land-line communications system would be developed to defeat WP radio intercept and jamming capabilities. Indirect artillery and air support should be more reliable; and, at the same time, the "fog of war" would be alleviated for the theater commander by providing more secure and immediate information to assess WP moves and the means to issue timely orders.

The author's alternative posture could be described as a "sword and shield" approach in which the shield is firmly rooted in the ground and the sword is wielded in a very immediate and forward manner.

Brig. Gen. Franz Uhle-Wettler, Chief of Planning, SHAPE,
as reported to Udo Philipp--"Area Defense by Light Infantry"

WHY IS THIS CONCEPT NEEDED?

Gen. Uhle-Wettler believes that given Germany's large areas of rough terrain NATO does not have the right kind of forces to wage a credible defense. Some of his reasons for wanting to restructure NATO's current forces are:

- o Because NATO's current force is heavily mechanized and oriented primarily toward attack, almost half of the territory suitable for defensive warfare cannot be used.
- o With 30 percent of the FRG composed of hills, mountains, and woodland, the effectiveness of mechanized forces and direct fire weapons is greatly reduced.
- o Since there is, on the average, a village of 230 inhabitants in every square km in the FRG, towns and villages will be battle areas for which mechanized forces are not well suited.
- o Many AT weapons being developed cannot be used below certain minimum ranges--i.e., they are better for open terrain, which would push the attacker into wooded or built-up areas, particularly if they are inadequately defended.

Uhle-Wettler suggests that because 80 percent of combat engagements will take place at distances below 2000M, a different kind of force must be developed to supplement the mechanized forces, not replace them. The basic tenets of his idea are:

- o Light infantry forces must be developed to wage combat in rugged terrain.
- o Armored and mechanized units should be retained but used only in open country.
- o The new infantry force protects itself from enemy fire primarily by dispersal rather than by armor and mobility. This dispersal would be maintained throughout the conflict.
- o It should be structured like a mechanized unit, element sizes ranging from a section to a brigade. Only rarely would a full division be required.
- o Weapons should be light and man/helicopter transportable. Weapons that are difficult to support should be eliminated to reduce the logistics load. Infantry units should requisition civilian vehicles if the need arises.

HOW IT WORKS

General Uhle-Wettler's concept is basically terrain-oriented; units should be tailored and equipped to suit the tasks dictated by the terrain. Infantry units will fight in the areas of rough terrain and in the cities, with light weapons and preferably no vehicles, while conventional mechanized units would restrict their operations to open country. Infantry will fight in its assigned area much like a strong partisan group and will remain dispersed.

There must be no gaps in the defense--i.e., "the German army must maintain a continuous minimum presence in every area." By this means, the response to an attack can be immediate and, with the aid of reinforcements, can be handled "without an excessive loss of territory."

III. OBSERVATIONS

It is beyond the purpose of this survey to attempt an evaluation of the many proposals reviewed in the previous section. At the same time, their content leads to several observations that seem particularly relevant to fundamental questions about the defense of NATO's Central Region.

Perhaps the most obvious of these is the general scope and variety to be found in the proposals. The variety extends not only to the particulars of the proposals themselves--as seen in Table 3--but to the authors' perceptions of the underlying reasons for wishing to change current policies, strategies, and operational concepts, as set out in Table 2.[1] The proposals also reflect a wide range of change. Some proposals--exemplified by Buden and Loser--advocate sweeping and fundamental changes in the entire edifice of NATO's military thinking. Others, such as Nunn and Martin, appear as less drastic variations on the current status.

From a military perspective alone, five major issues seem to emerge as the principal characteristics among the proposals. These issues are:

1. How much reliance should be placed on nuclear weapons and how much on conventional means? The positions range from total reliance on nuclear weapons to their outright rejection.
2. Should the defensive strategy emphasize attrition or maneuver? The positions vary from totally mobile defense forces to fixed barriers.

[1] There are many arguments against making any major change in NATO's defense concept. They include beliefs that such change is not necessary, current programs and measures are adequate to improve NATO's defense capability, change is not politically feasible, alliance concurrence is unlikely, public and budget support are lacking, etc.

3. Should a defense embodying considerable area and depth be adopted in place of the current linear forward defense? Variations on this issue, as on the preceding issue, include positions on the military and political implications of trading space for time, the role of reserves and reinforcements, and similar items.
4. How much reliance should be placed on high-technology weaponry and how much on greater numbers of cheaper and less sophisticated weapons?
5. What should be the role of the reservist and territorial forces of the FRG? Several of the proposals give major roles to reserve and territorial units as combat entities, and others seem content with the current concept, which treats reservists as fillers and replacements for regular units and assigns a minor combat role to territorial forces.

In general, the broad differences among the various concepts that are proposed lie in the extent to which each author considers one or another of these issues as more crucial than the rest, and his position, whether stated directly or implied, on the issue(s) that he regards as important.

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